

Helping Customers Innovate, Improve & Grow



Features

- High Precision TCXO
- OCXO Replacement
- OCXO Temperature Performance
- Low power consumption
- Tight Tolerances
- Frequency range ¹ of 6.4 - 26 MHz
- Standard Frequencies : 10, 12.8, 19.2, 20, 26 MHz
- up to 40MHz on request ¹

Applications

- Base Station
- Test Equipment
- Femto Base Station
- Communication Equipment
- Digital Switching

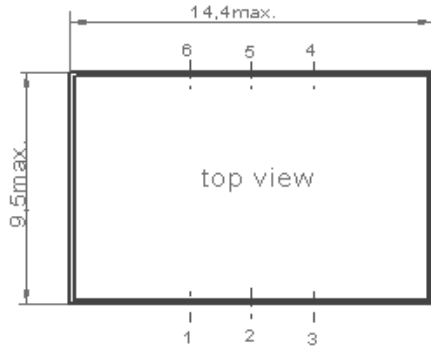
Performance Specifications

| Frequency Stabilities ¹ (Standard - 6.4 to 26 MHz) | | | | | | |
|---|------|---------|------|-------|---|----------------------|
| Parameter | Min | Typical | Max | Units | Condition | |
| vs. operating temperature range (referenced to +25°C) | -280 | | +280 | ppb | -40 to +85°C | Options ³ |
| | -140 | | +140 | ppb | -40 to +85°C | |
| | -100 | | +100 | ppb | -40 to + 85°C for some frequencies ¹ | |
| | -100 | | -100 | ppb | -20 to +70°C | |
| | -70 | | +70 | ppb | -20 to +70°C | |
| | -50 | | +50 | ppb | -20 to + 70°C for some frequencies ¹ | |
| Initial tolerance | -0.5 | | +0.5 | ppm | at time of shipment, nominal EFC | |
| vs. supply voltage change | -10 | | +10 | ppb | V _s ±5% static | |
| vs. load change | -10 | | +10 | ppb | Load ±5% static | |
| vs. aging / day | -10 | | +10 | ppb | after 30 days of operation | |
| vs. aging / year | -1.0 | | +1.0 | ppm | after 30 days of operation | |
| vs. aging / 10 years | -3.0 | | +3.0 | ppm | after 30 days of operation | |

Performance Specifications

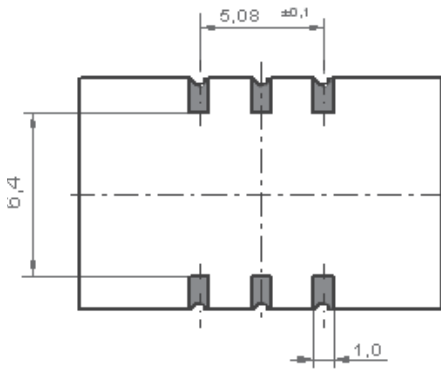
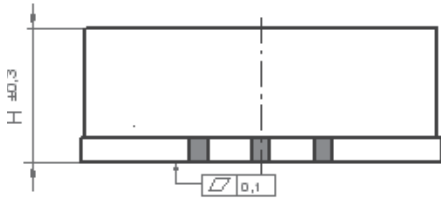
| Supply Voltage (Vs) | | | | | | |
|--------------------------------------|----------------------------|---------|--------|--------|----------------------------|---------------------------------|
| Parameter | Min | Typical | Max | Units | Condition | |
| Supply voltage (standard) | 3.135 | 3.3 | 3.465 | VDC | @HCMOS | |
| Current consumption | | | 12 | mA | | |
| RF Output | | | | | | |
| Signal [standard] | HCMOS | | | | | |
| Load | 13.5 | 15 | 16.5 | pF | | |
| Signal Level (Vol) | | | 0.3 | VDC | with Vs=3.3V and 15pF Load | |
| Signal Level (Voh) | 2.6 | | | | with Vs=3.3V and 15pF Load | |
| Duty Cycle | 40 | | 60 | % | @ (Voh-Vol)/2 | |
| Rise and Fall time | | | 5 | ns | @15 pF 10 to 90 % | |
| Frequency Tuning (EFC) 6.4 to 26 MHz | | | | | | |
| Tuning Range | Fixed TCXO; No adjust | | | | Opti- on ⁵ | |
| Tuning Range | ±5.0 | | | ppm | | |
| Linearity | <10% | | | | | |
| Tuning Slope | Positive | | | | | |
| Control Input Impedance | 80 | 100 | 120 | kOhm | | |
| Control Voltage Range | 0.3 | 1.65 | 3.0 | VDC | with Vs=3.3V | |
| Additional Parameters | | | | | | |
| Phase Noise ² | | -90 | | dBc/Hz | 10 Hz | @ 12.8 MHz HCMOS 3.3 V |
| | | -117 | | dBc/Hz | 100 Hz | |
| | | -137 | | dBc/Hz | 1 kHz | |
| | | -148 | | dBc/Hz | 10 kHz | |
| | | -151 | | dBc/Hz | 100 kHz | |
| | -152 | | dBc/Hz | 1 MHz | | |
| Jitter | | 0.2 | | ps RMS | @ 12 kHz to 20 MHz | |
| Weight | | | 8.0 | g | | |
| Processing & Packing | Handling & Processing Note | | | | | |
| Absolute Maximum Ratings | | | | | | |
| supply voltage (Vs) | | | 6.0 | V | with Vs=3.3 VDC | |
| Output Load | | | 50 | pF | | |
| Operable Temperature Range | -40 | | +85 | °C | | |
| Storage Temperature Range | -40 | | +90 | °C | | |

Outline Drawing / Enclosure

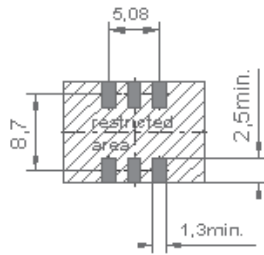


G 287

H = 9,9 : G 287 A
 H = 5,9 : G 287 B
 H = 6,4 : G 287 C



Dimensions in mm

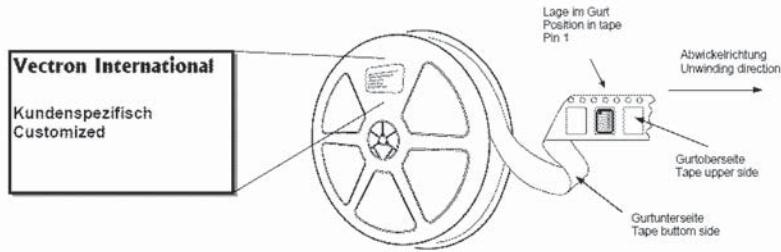
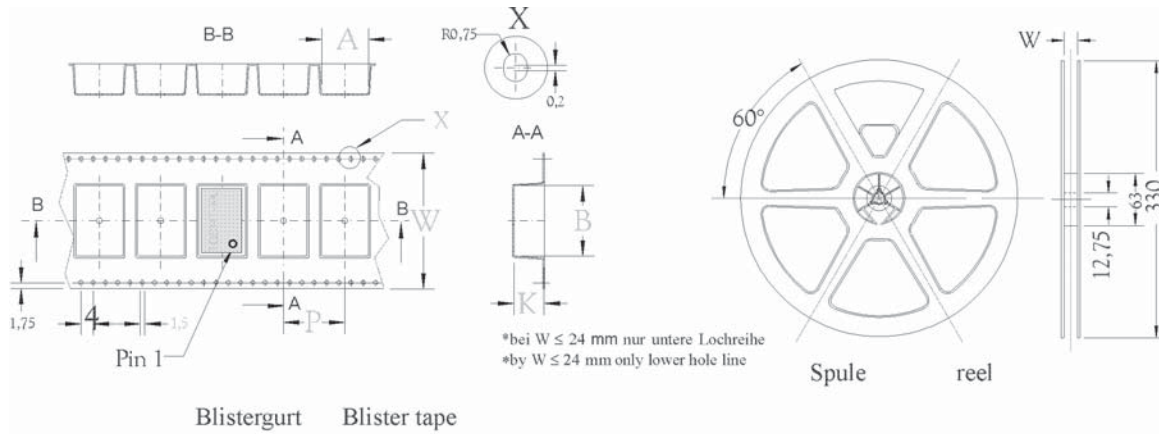


Padvorschlag
 land pattern
 recommendation

| TX-502 | |
|------------|----------------|
| Height "H" | Pin Length "L" |
| 5.9 | NA |

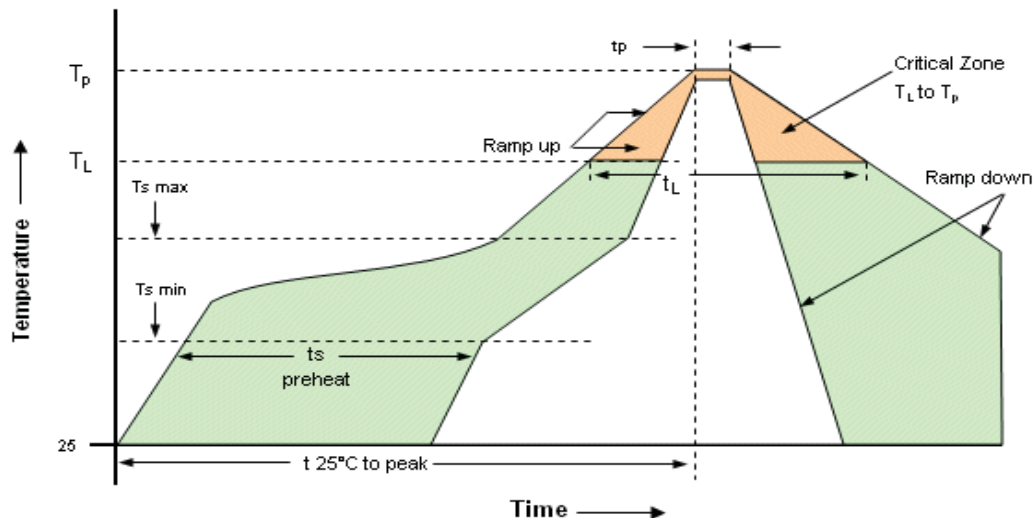
| Pin Connections | |
|-----------------|-----------------------------------|
| 1 | Control Voltage Input (Vc) / N.C. |
| 2 | N.C. |
| 3 | Ground (Case) |
| 4 | RF-Output |
| 5 | N.C. |
| 6 | Supply Voltage Input (Vs) |

Standard Shipping Method (TX-502)



| Enclosure Type | Tape Width W (mm) | Quantity per meter | Quantity per reel | Dimension P |
|----------------|-------------------|--------------------|-------------------|-------------|
| G287 | 24 | 83,3 | 850 | 12 |

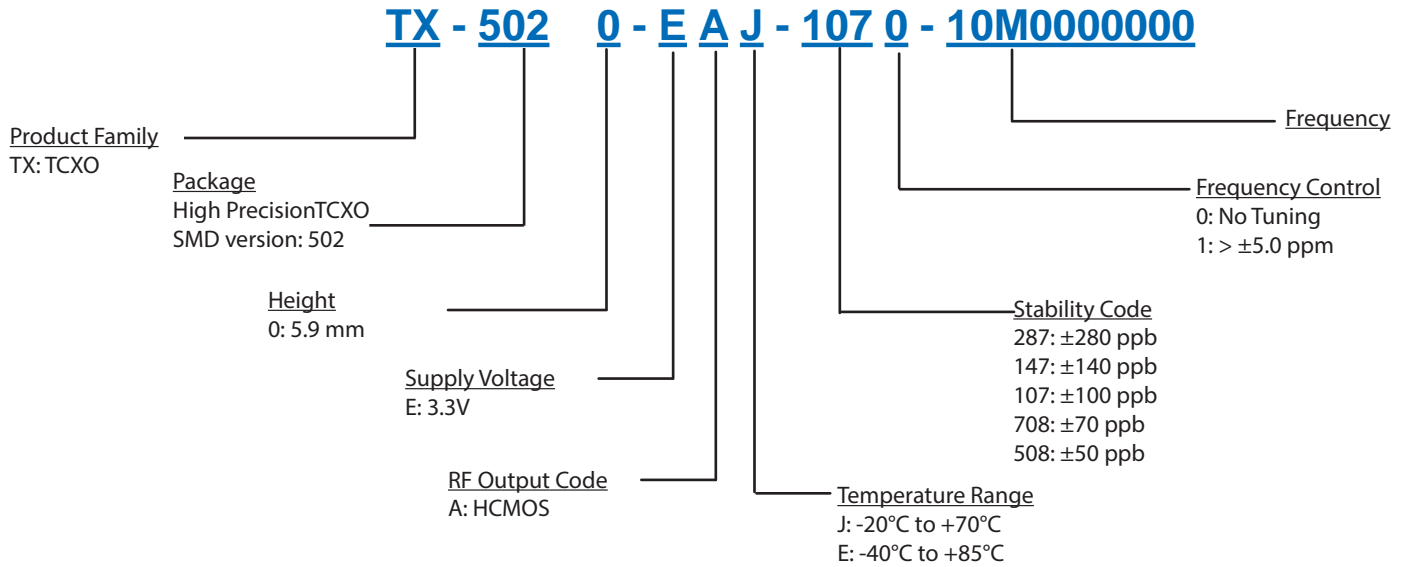
Recommended Reflow Profile



| Profile Feature | Pb-Free Assembly/ Sn-Pb Assembly | Profile Feature | Pb-Free Assembly/ Sn-Pb Assembly |
|---|-------------------------------------|--|-------------------------------------|
| Average ramp-up rate (T_L to T_p) | 3°C/second max. | Time 25°C to Peak Temperature | 8 minutes max. |
| Preheat -Temperature Min T_{Smin} -Temperature Min T_{Smax} -Time (min to max) t_s | 150°C 200°C 60-180 seconds | Time maintained above -Temperature (T_L) -Time (t_L) | 217°C 60-150 seconds |
| T_{Smax} to T_L -Ramp-up Rate | 3°C/second max | | |
| Time maintained above -Temperature (T_L) -Time (t_L) | 217°C 60-150 seconds | Time within 5°C of actual Peak Temperature (t_p) | 20-40 seconds |
| Peak Temperature (T_p) | max 260°C | Ramp-down Rate | 6°C/ second max |

Note: All temperatures refer to topside of the package, measured on the package body surface.

Ordering Information



Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Phase noise degrades with increasing output frequency.
3. Contact factory for availability.

Unless other stated all values are valid at typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).

Subject to technical modification.

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Rev: 10/2013